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product is provided. The process involves repeatedly conducting the following steps (i) to (iii) to form the metal electrodes ranging from the surface of the ion-exchange resin product to the inside thereof: (i) a step of allowing the ion-exchange resin product to adsorb a metal complex (adsorption step), (ii) a step of reducing the metal complex adsorbed on the ion-exchange resin product by a reducing agent to deposit a metal on the surface of the ion-exchange resin product (deposition step), and (iii) a step of washing the ion-exchange resin product having the deposited metal (washing step). Through the above steps, a polymeric actuator having simple structure, capable of being easily miniaturized, showing quick response and capable of generating large displacement can be obtained.--